



*"Water Ecology Day was lots of fun, and I think it's really great for kids to be able to experience the water tests themselves." - Lauren*



A high-speed photograph of a water droplet hitting a surface, creating a large, clear splash with many smaller droplets in the air. The background is a soft, out-of-focus blue.

# Water Ecology Day

Anne Farley Schoeffler, PhD  
Seton Catholic School

[schoefflera@setoncatholicschool.org](mailto:schoefflera@setoncatholicschool.org)

## Hudson Springs Park, Hudson, OHIO



Very small creek (average width = 2 m; average depth = 10 cm)



*It made a huge ripple effect in my enthusiasm for science.*

*- Elaina*





**Venue:** Where will you take your class?! What should you look for?

Accessible shoreline of a pond, stream, or lake

You will need enough space to accommodate several manageable groups of students  
(ex. groups of 4-6)

A place to picnic!

**Avoid:**


- \* steep banks
- \* heavy vegetation, especially poison ivy
- \* fast current
- \* deep water
- \* traffic
- \* obstructions

**Season:**

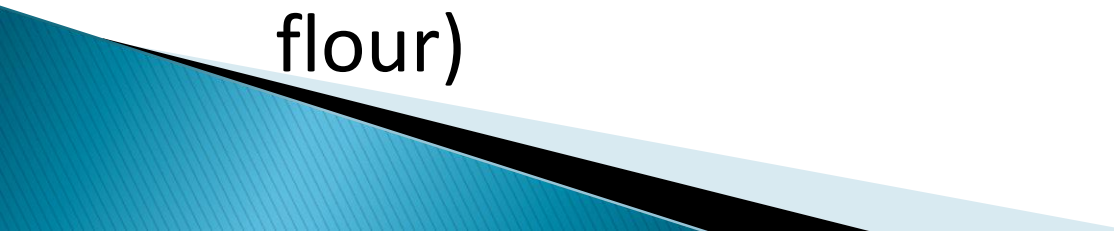
Autumn – some small streams do not have water

Spring – may be cold but try to go before vegetation has grown tall; I like early May

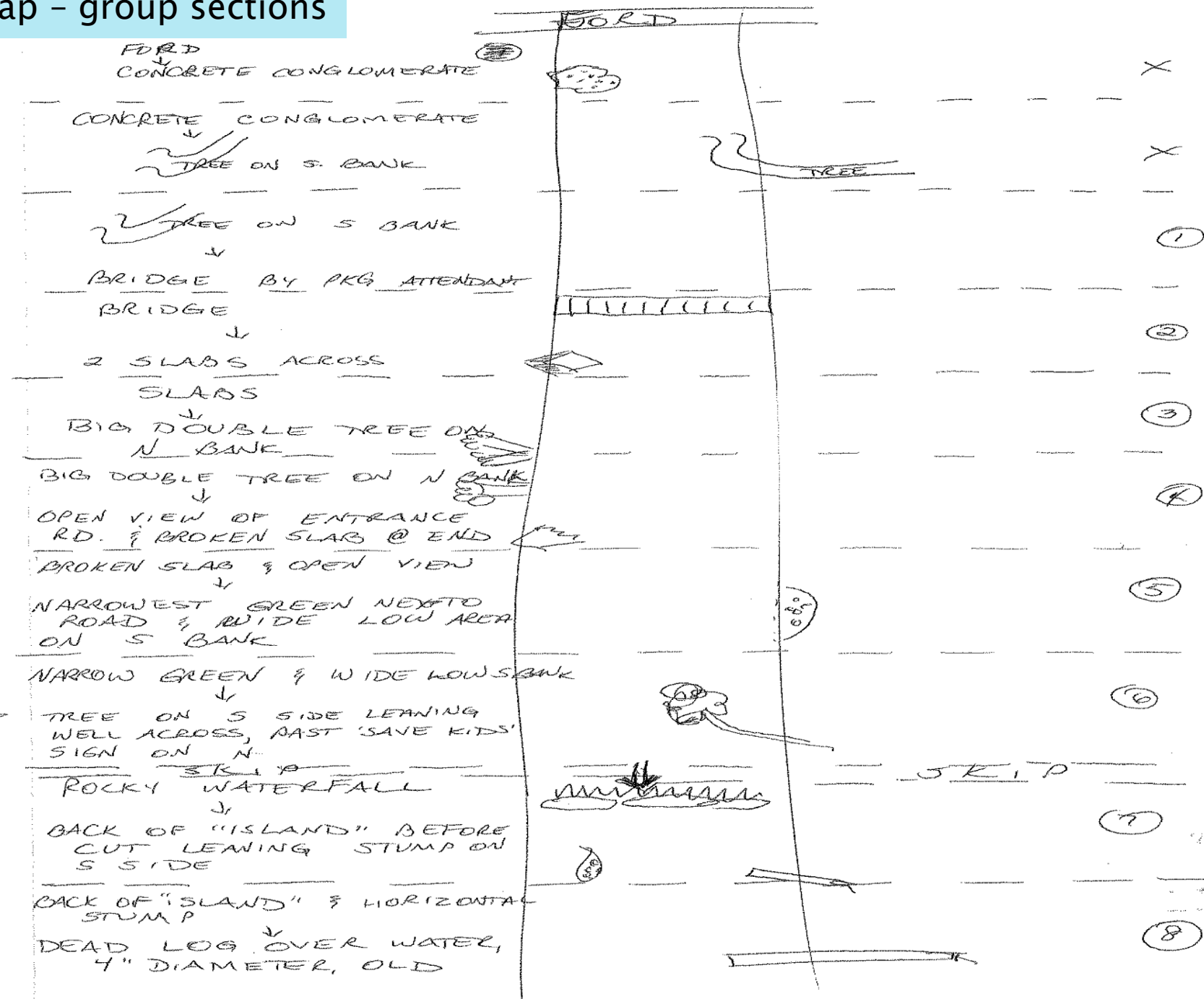
## Safety – Your primary concern!

- Parent permission slips
  - Have school emergency forms & cell phone
  - Parent volunteers or other supervisors, ideally at a ratio of one per student group; more about them later!
  - An emergency vehicle even if you can walk to your site\*
  - First aid kit
  - Individual medications, e.g., epi pens, Benadryl, etc.
  - Have a plan for removing a disruptive student\*
  - Weather – DO go if there is rain; DON'T go if there is lightning!
- 

## Things to do before you go:

- Make reservations or permissions if necessary.
  - Collect and organize supplies
  - Prepare data book or other means of recording observations
  - Segment the space into sections of about 3 meters
  - Map landmarks, so you can recall them (see next slide)
  - Mark segments on the day of the trip (I use flour)
- 

# Site Map - group sections





## Student Rules:

Leave all sticks, rocks, etc. on the ground.

Stay with your assigned group.

Work cooperatively.

Stay away from traffic.

No littering.

Use equipment with care.

No splashing of water; no pushing people into water.

Do not travel beyond your assigned spaces.

### Consequences for not following them:

Removed from activities and ...

... taken back to school, or

... remain with adults.

Grades are impacted if data is not collected.

# Use parents but give them clear instructions!

They can:

- Supervise; count kids!

- Supervise base pavilion equipment, especially microscopes!

- Manage shared equipment, e.g., transparency tubes


- Take pictures

  - \* for fun

  - \* for human impact essays

Parents may not be comfortable disciplining, but they can report to you if they observe uncooperative or wandering students.

Assign yourself no responsibilities; you will be busy the whole time!





# What could go wrong?


- ▶ Lost student
- ▶ Thunderstorm – watch the forecast!
- ▶ Defiant student
- ▶ Student falls in water
- ▶ Violations of rules



# What to do when you're there:

Water quality tests, depending on supplies, equipment, age of students.

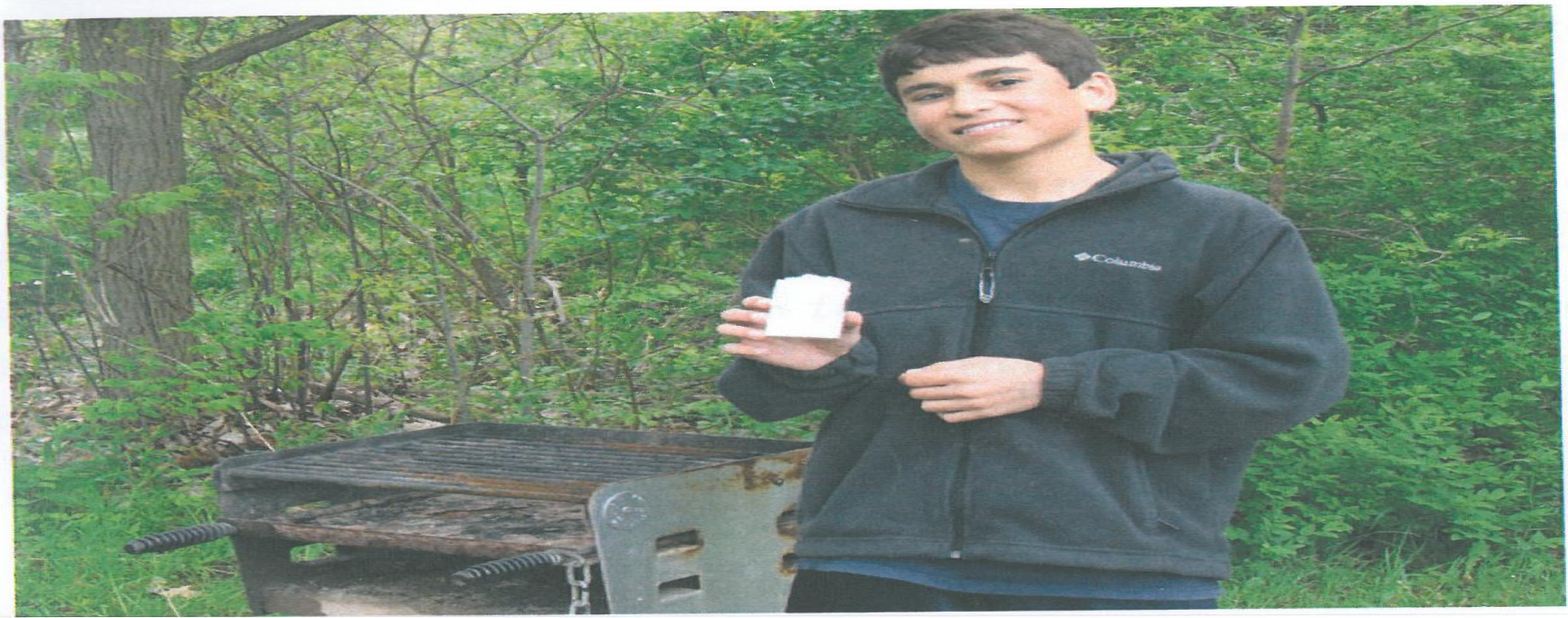
Some examples include:

- Benthic macroinvertebrates
  - Microorganisms – fecal cultures, microscope observation
  - Temperature, pH
  - Turbidity
  - Chemical tests (nitrates, phosphates, chlorine, dissolved oxygen)
  - Physical assessment (substrate, bank height and stability, flow rate, land use, habitat, riparian vegetation)
- 



# Bibliography

- ▶ *Academic Content Standards*. (2002). Ohio Department of Education. Retrieved February 5, 2012, from <http://www.ode.state.oh.us/>
- ▶ *Critter Clues*. (1995). United States Environmental Protection Agency. Retrieved January 21, 2012, from <http://www.epa.gov/superfund/students/classact/spring/critter.htm>
- ▶ *Haiku Hike*. (2005). New York: Scholastic Inc.
- ▶ *LaMotte Water Monitoring Kit* (manual code 5848). Denver: Earth Force.
- ▶ Mitchell, M.K. & Stapp, W.B. (2008). *Field Manual for Water Quality Monitoring*. Dubuque: Kendall/Hunt Publishing Company.
- ▶ Patrick, P. & Patrick, T. (2010). Picture This: Taking Human Impact Seriously. *Science Scope*. March. 28-34.



**Humans have had a great impact on the Hudson Springs Park ecosystem. We have added many recreational structures and have destroyed many potential homes for organisms. We have also put in a lake which provides homes for some organisms but destroy homes for other organism. The constant human activity disrupts the daily life of the organisms. The Human activity disrupts Hudson Springs Park greatly.**



Green stems and white tops  
Bees yellow pollen all around  
God bless all the bees







*It didn't seem like an experiment. It was fun and dirty, but we all learned many things in different ways. - Mikaela*